

The background of the cover is a photograph of a hand in a white glove pulling a green curtain. The curtain is being pulled from the left side, revealing a bright, hazy light source on the right. The hand is wearing a white glove and is part of a dark green garment with gold embroidery on the sleeve. The overall color scheme is dominated by green and white, with a bright light source on the right.

RR



REASON & REVELATION

A Monthly Journal of Christian Evidences

DECEMBER 2013 • VOL. 33 • NO. 12

Science:

*The Man Behind
the Curtain*

AT WHAT HOUR

Was Jesus Crucified?

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Jerry Fausz, Ph.D.

[EDITOR'S NOTE: A.P. auxiliary staff scientist Dr. Fausz holds a Ph.D. in Aerospace Engineering from Georgia Tech.]

OUR society places a great deal of faith and trust in Science. The reverence that many in our society grant to Science is clearly illustrated in a 1998 article published in *Science* magazine. The article is a compilation of essays and poetry submitted by the students of Holmdel High School in New Jersey: writings which were, in fact, solicited by the 150th anniversary committee of *Science* (Jackel, et al., 1998).

For example, a young lady named Megan McIlroy begins her essay, titled "What Science Means to Society," with the words, "In a society where all aspects of our lives are dictated by scientific advances in technology, **science is the essence of our existence**" (Jackel, et al., emp. added). The following is a poem written by Brian Sze in the same article:

"Seesaw of the Spirit"

As science develops, religion declines,
Because religion begins where science ends.
As more and more knowledge fills our minds,
Religious influence lessens.

**Religion was based on assumed claims,
Which through time have been proved wrong.**
But the Church has been too strict to change,
Which has been its downfall all along.

Creation gives us an account
Of man and woman's first acts,

But **evolution seems paramount,**

Because it is supported by facts.

So now we are presented with a choice.
Scientific knowledge or conviction?

Everybody has a voice

In answering this controversial question
(Jackel, et al., emp. added).

In one additional example, Jenitta Kwong begins her essay, titled "Science as Livesaver," with "Science is everything to me," and in her concluding remarks suggests that, without science, "Life would be meaningless" (Jackel, et al.).

*Is the importance
placed on Science by
our society warranted?*

How is it that high school children come to the conclusion that Science **dictates** all aspects of our lives to the extent that **life would have no meaning** without Science? From what do they deduce that a presumed "seesaw" between science and religion culminates in a controversial question? It is difficult to believe that very many individual scientists or technologists would suggest such a philosophy regarding science and religion. Most likely, these sentiments reflect values that have been passed on to these children by certain

educators, their parents, and/or various friends or mentors with whom they may have associated. In short, our society has in some way conveyed to these children that Science has a position of ultimate importance in their lives that is, sadly (and mistakenly), terminally at odds with faith and religion. Perhaps most strikingly, this misconception has also occurred with very little, if any, input from Science itself.

No doubt, science and technology have given us many conveniences that seem, at least in a shallow sense, to have vastly improved the quality of human existence, but is that enough to suggest that **Science is everything**? Is the importance placed on Science by our society warranted? More important, does Science pose a better explanation for the meaning of life than religion? To add context to these questions, it is useful to examine the statements and writings of those who hold a preeminent position in the scientific arena.

The fact is, Science goes farther than just claiming preeminence over religion and belief in God in many of these statements. In 2006, several scientists at a conference in La Jolla, California advocated militant eradication of God and religion from society to be replaced completely with the precepts of science. At this conference, cosmologist Stephen Weinberg stated: "The world needs to wake up from the long nightmare of religion.... Anything we scientists can do to weaken the hold of religion should be done, and may in fact be our greatest contribution to civilization." And celebrated evolutionist Richard Dawkins said: "There's a certain sort of negativity you get from people who say 'I don't like religion but you can't do anything about it.' That's a real counsel of defeatism. We should

roll our sleeves up and get on with it” (as quoted in Lyons and Butt, 2007).

Others have simply approached the debate by claiming that science makes God and religion irrelevant. Famous theoretical physicist Stephen Hawking recently wrote: “Because there is a law such as gravity, the Universe can and will create itself from nothing. Spontaneous creation is the reason there is something rather than nothing, why the Universe exists, why we exist,” adding, “It is not necessary to invoke God to light the blue touch paper and set the Universe going.” These statements appear in Hawking’s 2010 book titled, ironically, *The Grand Design* (Hawking and Mlodinow, p. 181). Hawking goes on to explain:

The question is: is the way the universe began chosen by God for reasons we can’t understand, or was it determined by a law of science? I believe the second. If you like, you can call the laws of science “God,” but it wouldn’t be a personal God that you could meet, and ask questions (p. xx).

Here Hawking again attempts to de-emphasize God in favor of Science. Even more, there is a subtle attempt in the last statement to replace God with Science in suggesting that the “laws of science” might be called “God.”

Accomplished scientists such as Hawking and Weinberg, high profile evolutionist Dawkins, and a group of high school students from New Jersey seem to be in agreement that Science holds a place of preeminence over everything, even overshadowing religious conviction. They present science as an omniscient benefactor that gives us everything we need and tells us everything we need to know—very much as many relate to God.

Science, though, has a few things to say about its own “omniscience” that

have a direct bearing on the question of whether or not it has eliminated the need for God. Furthermore, these observations have much to say regarding the supposed preeminence of science in our society.

SCIENTIFICALLY UNCERTAIN

PRIOR to the 20th century, science and the Universe were believed to be strictly and objectively “deterministic,” meaning that all constituent elements of the Universe could be uniquely characterized and even predicted by fixed natural laws with straightforward (though sometimes complex) closed-form mathematical representations or models. For example, mathematical equations can be formulated for the motion of an object in space using Newton’s Laws of Motion and for the orbits of planets and artificial satellites using Kepler’s Laws of Planetary Motion. This deterministic way of looking at the cosmos is often referred to as “classical physics” or “classical mechanics.” Interestingly, while many of the results of classical mechanics have been shown to have a limited domain of validity, engineers still successfully use the

concepts daily in building bridges, designing automobiles, navigating aircraft, and launching satellites into near Earth orbit.

During the past century, however, the theory of relativity and theorems accompanying the birth and growth of the emerging field of quantum mechanics cast doubt on this view of determinism in the minds of many scientists. Most notably, the Heisenberg Uncertainty Principle of 1927 stipulated that the position and momentum of sub-atomic particles could not both be uniquely determined to an arbitrary degree of accuracy. That is, there will always be uncertainty in the measurement of at least one of these values that severely limits accuracy when one tries to measure both. Heisenberg’s result has since been extended to other pairs of measurements for subatomic particles, such as energy and spin. These momentous results present a fundamental limitation on the ability of Science to uniquely determine the complete state of the Universe at any given time.

Scientists initially believed that the uncertainty phenomenon was simply a

Reason & Revelation is published monthly by Apologetics Press, Inc. Periodicals postage paid at Montgomery, AL. **Postmaster:** Send address changes to **Reason & Revelation**, 230 Landmark Dr., Montgomery, AL 36117; **ISSN:** [1542-0922] **USPS#** 023415.

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consequence of taking measurements. For example, one might bounce a photon of light off of a subatomic particle and measure its position based on the return speed of the photon. In doing so, however, the momentum of the subatomic particle is changed and can no longer be determined accurately. Thus, the observer and his measurements have a profound effect on the resulting observation (Davies, 1984, p. 49). Dean Overman states: "What one observes depends to some extent on how one observes. The observer cannot be removed from the subject of the observation" (Overman, 1997, p. 29).

On the other hand, many scientists have interpreted the results of quantum mechanics to imply that the Universe itself is inherently non-deterministic. Scientific philosopher Paul Davies refers to this interpretation as "the 'party line' which maintains that quantum fuzziness is inherent in nature, and irreducible" (1984, p. 42). Thus, these scientists believe that quantum theory is an apt description of the reality of the Universe, rather than simply describing the effect the scientist has on the system when trying to take measurements. Notably, Albert Einstein, who helped formulate quantum theory, militantly disagreed with this interpretation as we see from one of his most well-known quotes, "God does not play dice." Einstein believed that

behind the quantum world of unpredictable fuzziness and disorder lay a familiar classical world of concrete reality in which objects really possess well-defined properties such as location and speed and move according to deterministic laws of cause and effect (Davies, 1984, p. 42).

While scientists clearly do not agree on the correct interpretation

of quantum theory, one thing that both sides agree on is that the uncertainty of the theory is inescapable and "irreducible," as Davies describes it. The Uncertainty principle has a profound effect on the ability of Science to fully characterize the Universe. The "fuzziness" of quantum mechanics ensures that Science will remain unable to explain the Universe at its most basic level. Perhaps this can most readily be seen in the inability of Science to even determine the underlying meaning of its own quantum theory.

MATHEMATICALLY INCOMPLETE

IN 1931, an Austrian mathematician named Kurt Gödel formulated and proved a theorem that stipulated "for any consistent mathematical system there exists within the system a well-formed statement that is not provable under the rules of the system" (Overman, p. 27). This result, known as Gödel's First Incompleteness Theorem, implies that a mathematical system can be shown to be consistent, but will be unable to prove its own consistency within the rules of the system, thus cannot be shown to be "complete." This fact has serious implications for scientific investigation, since mathematics is almost always utilized as a framework for organizing scientific thought and making application of resulting scientific principles. Scientific laws can be very often recognized more by their mathematical formulation than their narrative text. For instance, while many recognize the equation $E=mc^2$ as a statement from the Relativity Theory of Albert Einstein, few would recognize the statements of the theory underlying that famous formulation.

Certainly, mathematical research subsequent to the work of Gödel has identified very specific, limited mathematical systems that are

"self-consistent," that is, they are both consistent and complete. However, these limited results are not relevant to consideration of the First Incompleteness Theorem in a context that involves formulating scientific understanding and characterization of the entire Universe as opposed to a limited mathematical system. Thus, **Gödel's theory presents a critical impediment to the idea that Science can ever remove the possibility of God from a full understanding of the Universe.** As Overman explains:

Gödel's theorem demonstrates that mathematics is incomplete because the system leaves unanswered the truth or falsity of certain mathematical propositions which are the logical results of valid mathematical inferences (p. 28).

Since Science relies almost entirely on mathematics for developing and expressing its premises and results, Gödel's theorem and proof should give great pause to anyone placing their total confidence in Science. Mathematical incompleteness will not pervasively limit scientific endeavor since mathematical constructions of closed systems can be both consistent and complete. However, as Science continues to pursue an explanation and corresponding model of the Universe as a whole, "at any moment a contradiction could arise and shake the system down to its foundations" (Overman, p. 28) due to the inability to show both consistency and completeness of the mathematical framework involved.

THE UNKNOWABLE

RELATED to the idea of "incompleteness" formulated by Gödel is the concept of "undecidability." Researchers have conceived many undecidable problems in mathematics and logic. A well-known example

from logic is the so called “liar’s paradox,” which is

contained in the statement by Epimenides, a Cretan, who asserts, “all Cretans are liars.” If one assumes that Epimenides is telling the truth, then he is lying. But he cannot be lying because we have assumed he is telling the truth (Overman, p. 26).

Conversely, if we assume Epimenides is lying, then his statement becomes self-contradictory. The liar’s paradox is a logically undecidable proposition.

As for mathematics, mathematician Gregory Chaitin formulated an uncomputable number known as Omega (Ω), which represents the probability that a computer program will halt when its input is a random string of binary numbers. In general, probabilities fall between 0 and 1, where zero represents an event having no chance of occurring (zero probability) and 1 represents certainty. Davies suggests that Ω is “close to 1, because most random inputs will appear as garbage to the computer” and cause it to crash (1992, p. 133). However, Davies goes on to point out that the expansion of Ω beyond the first few digits is totally random, which implies there can be no algorithmic means to generate Ω .

What is most interesting, though, about Chaitin’s result is that Ω is representative of “halting” problems for computer programs, in general, which have been shown to be mathematically undecidable. This prompts Davies to suggest: “So knowing merely the first few thousand digits of omega would give us access to a solution of all outstanding mathematical problems of this type” (1984, p. 134). However, since Ω is completely random beyond the first few digits, it is uncomputable. The implications of this fact are further discussed by Davies:

Unfortunately, being an uncomputable number, omega can never be revealed by constructive means, however long we work at it. Thus, short of a mystical revelation, omega can never be known to us. And even if we were to be given omega by divine transmission, we would not recognize it for what it was, because, being a random number, it would not commend itself to us as special in any respect (1992, p. 134).

This quote is truly remarkable. Of course, we might argue quite reasonably that if such a number were to be given “by divine transmission,” such a transmission might likely include an indication of the meaning and importance of the data. That would certainly be the proper way to view divine revelation.

*“Perhaps it is true
that the heavens
also declare the
boundaries of
scientific knowledge.”*

However, Davies’ statements raise an engaging question regarding that which is unknowable. In some sense, all of nature is a form of divine transmission (“The heavens declare the glory of God; and the firmament shows His handiwork”—Psalm 19:1). Yet there is so much we do not understand and, it appears, can never understand. Perhaps it is true that the heavens also declare the boundaries of scientific knowledge. It certainly appears to be true that mathematics and science pose a hard limit on the extent of what Science can ultimately “know.”

BEHOLD THE GREAT AND POWERFUL...SCIENCE?

IN the movie classic *The Wizard of Oz*, there is the familiar, seminal moment when the true “Wizard of Oz” is about to be discovered by Dorothy and her companions. At that moment, the “Wizard” desperately and frantically states: “Pay no attention to that man behind the curtain!” (Fleming, 1939). Certainly, scientists are aware of the limitations implied by results such as the Incompleteness Theorems, the Uncertainty Principle, and the uncomputable problems of mathematics. But this awareness does not stop Science, or at least certain of its most prominent representatives, from continuing to present Science as the omniscient benefactor that so many believe it to be. When scientific beliefs and theories, like manmade global warming and Darwinian evolution, are challenged, often the scientific community will attack the challenger, instead of addressing the merits of the challenge itself, almost as if to say, “**Pay no attention to that man behind the curtain.**”

But scientific achievement is replete with modern examples of its own limitations. Overman comments:

The limits of our reasoning powers raise the question whether scientific explanations for the origin of the laws of physics, the Big Bang, or the origin of life are issues which fall into...the indeterminate category represented by Gödel’s Incompleteness theorem (p. 28).

Origin of Universe

Scientists continue to be conflicted regarding how the entire Universe came into existence in the first place. The longest prevailing theory (besides divine Creation), of course, is the so-called Big Bang theory—still the front-runner according to many scientists. However, researchers like

(cont. on p. 140)

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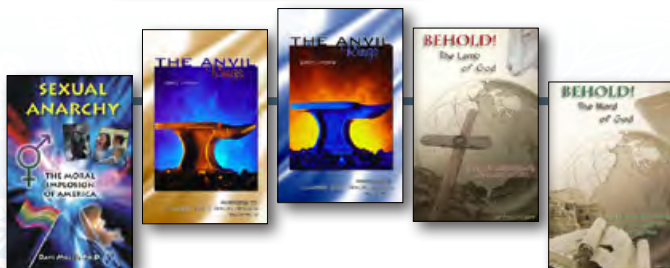
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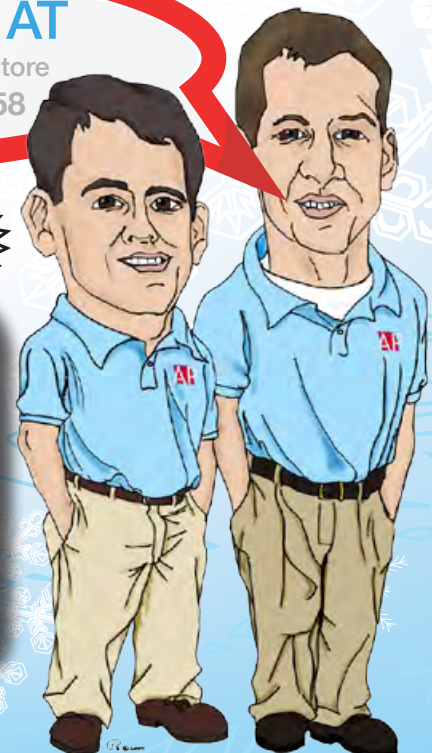
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Stephen Hawking have exerted significant effort to replace the Big Bang Theory due to their inability to explain the Big Bang singularity and how it came into existence. In fact, Hawking once observed that, at the Big Bang singularity, “the laws of science and our ability to predict the future would break down” (1988, p. 117).

The difficulties with the Big Bang theory are, at least in part, a consequence of quantum theory and the Uncertainty Principle. As noted, the Uncertainty Principle limits accuracy in making measurements at a sub-atomic level. This limit, however, has an exact numerical characterization known as Planck’s constant, a physical constant associated with quantum mechanics that was first derived as the proportionality constant between the energy of a photon and the frequency of the photon’s wave form. In short, light can be treated as a particle (photon) or a wave, and Planck’s constant helps define the relationship between the two. As it turns out, Planck’s constant also happens to be the minimum amount of uncertainty that exists between the product of the momentum and position of a subatomic particle. It thus sets the boundary on the accuracy of those measurements in the formulation of the Uncertainty Principle.

This factor is related to uncertainty at the beginning of the Universe (according to the Big Bang model) due to another constant known as Planck time (Williams, 2010). Planck time is the time required for light to travel the distance of one Planck length. Both Planck time and Planck length are derived from Planck’s constant, the gravitational constant, and the speed of light. Remember that Planck’s constant provides a numerical limit on how

accurately Science can characterize sub-atomic behavior. Thus, it might come as no surprise that Planck time imposes a hard limit on theoretical, naturalistic models of the beginning of the Universe. These models are unable to “predict” in any way what may have been occurring in the first 5.39×10^{-44} seconds (Planck time) of the Big Bang model. If you are not familiar with scientific notation, this number can be written as a decimal point followed by 43 zeros followed by 539. This is an extremely small amount of time, but large enough to befuddle scientists concerned with promoting the Big Bang theory. [NOTE: We are not claiming that

Generally speaking, given the scientifically determined inability of Science to fully characterize our own Universe, verifying the existence and characterizing the nature of other possible universes seems quite a chore.

scientists actually know what happened from Planck time onward, but merely noting that they cannot know what happened before.]

One of the most prominent theories on the beginning of the Universe in recent years suggests that our Universe is just one of a large number of possible universes brought about by quantum fluctuation. Hawking describes the theory this way:

One picture of the spontaneous quantum creation of the universe is then a bit like the formation of bubbles of steam in boiling water. Many tiny bubbles appear, and

then disappear again. These represent mini-universes that expand but collapse again while still of microscopic size.... A few of the little bubbles, however, will grow large enough so that they will be safe from recollapse. They will continue to expand at an ever increasing rate.... These correspond to universes...in a state of inflation (Hawking and Mlodinow, 2010, pp. 136-137).

Note here that our own Universe is considered to be “in a state of inflation.” It is theorized that with such a large number of universes to “select” from, it is possible that a universe such as ours would exist. Specifically, Hawking says:

There seems to be a vast landscape of possible universes. However... universes in which life like us can exist are rare. We live in one which life is possible, but if the universe were only slightly different, beings like us could not exist (2010, p. 144).

This idea has mathematical tractability, subject of course to mathematical incompleteness and the potential of undecidability. With the inherent limitations of mathematics and logic, as well as the self-admitted impotence of Science with respect to predicting anything inside of Planck time, one might wonder how Professor Hawking can state with such certainty that universes like ours would be “rare.” In truth, we would have no way to know if every universe emerging from this hypothetical fluctuation wasn’t exactly like ours. Generally speaking, given the scientifically determined inability of Science to fully characterize our own Universe, verifying the existence and characterizing the nature of other possible universes seems quite a chore—**pay no attention to that man behind the curtain.**

Medical Science

Advances in medicine are often held up as some of the most impressive accomplishments of Science. Many of the essays in the *Science* article (mentioned at the beginning of this article—Jackel, et al., 1998) included references to advancements in the field of medicine. Eradicating Small Pox and treatment advances brought on by the Germ Theory of medicine are certainly some of the most impressive accomplishments of mankind. Even in the field of medicine, however, serious limitations in the ability to achieve desired results can be seen.

For example, the U.S. government claims that in 2013 it will spend \$29.7 billion on AIDS research, and that at least \$25 billion has been spent on AIDS research per year starting in 2009 (Kaiser..., 2013). That amounts to over \$100 billion spent on AIDS research in the last five years **without finding a cure**. Certainly, new life-extending treatments have been developed as a result of this research. But the primary objective of scientific endeavors in AIDS research, that is, a final cure for the viral infection, remains unrealized with no indication that it is likely to come anytime soon.

Similarly, cancer research has been carried on throughout most of our lifetimes with enormous levels of government and private funding. Furthermore, it cannot be said that the money is simply spent by bureaucrats with Science having little say. A 1999 report on sources of cancer research funding indicates that one of the top funding agencies for cancer research publishes its results in the “open scientific literature” and “reviews its strategic research plan with the research community each year and publishes it” (McGeary and Burstein, 1999, p. 4) Again, many

new treatments continue to be discovered, but a basic understanding of cancer, allowing for a cure instead of physically grueling treatments, still eludes researchers.

The science of medicine may one day cure AIDS, cancer, diabetes, heart disease, and maybe even the common cold. However, when Science is unable to design a camera that can remotely compare to the human eye, or a microphone that performs as well as the human ear, it is no surprise that Science doesn't have sufficient understanding of the human body to cure a disease, even with incredible amounts of funding being poured into research. Until those goals of modern medicine are achieved, Science as a whole might prefer for us to **pay no attention to that man behind the curtain**.

*Scientific omniscience
is impossible—which
further implies that
scientific omnipotence
is unachievable.*

CONCLUSION

SCIENCE is neither omniscient nor omnipotent. Gödel's Incompleteness Theorem, the Uncertainty Principle of Quantum Mechanics, and the undecidable and uncomputable problems of mathematics and logic show us that scientific omniscience is impossible—which further implies that scientific omnipotence is unachievable.

Mathematical incompleteness tells us that facts from outside of the system are required to prove the system to be both consistent and complete. Science relies implicitly on mathematics for the useful formulation of scientific

or natural laws. Furthermore, anything outside of the system (i.e., the physical Universe) is irrelevant to science since it cannot be observed and therefore cannot be measured and/or modeled. Perhaps even more fundamental, the uncertainty principle limits the ability of Science to characterize or measure that which is observable. Thus, in actuality, Science is impotent in the ability to understand even that which is in its purview.

Quantum theory is fundamental to one model of the beginning of our Universe, which suggests that many universes bubbled out of a quantum fluctuation and one of those bubbles grew into everything we can observe. This is ironic because it is the uncertainty principle of quantum theory and the concept of Planck time that places impassable limitations on the ability of Science to understand such a phenomenon. Thus, in order to formulate its model, Science is using the very tools that place some of the elements of the model outside of its bounds.

Hopefully, the answers to the questions at the beginning of this article are clear. Science as an omniscient benefactor is a *non sequitur*. Science is certainly not omniscient and has no hope of ever being so. It also follows that, while Science has shown much success in meeting some apparent needs of society, it is ultimately incapable of providing everything we need—such as cures for some of our most prevalent infirmities.

The true contributions of Science to our society should never be discounted. Society, though, should take much greater care in where it decides to place its trust. Conversely, Science would only make itself that much more of a boon to society by embracing its limitations and operating more fully

within them, instead of hiding behind the wizard's curtain and pretending to be the omniscient benefactor that society wants to make it.

In the biblical Old Testament, God challenged Job, saying, "Where were you when I laid the foundations of the Earth? Tell me, if you have understanding" (Job 38:4). The origin of our Universe represents one of the pursuits of Science that is, in fact, outside the normal bounds of scientific endeavor. It cannot be empirically modeled, no physical measurements can be made and, as God points out to Job, no man was there to make direct observation.

More to the point, God inspired Solomon, king of the Jews, to write: "He has made everything beautiful in its time. Also He has put eternity in their hearts, except that no one can find out the work that God does from beginning to end" (Ecclesiastes 3:11). Here we see that God not only wants us to understand that we were not there at the beginning of the Universe and have no basis of understanding that event, but also that He has created the Universe with built-in limitations on the extent of man's ability to characterize it. He has made us fundamentally a part of the system. As Overman states: "[T]he observer cannot be removed from the subject of the observation" (p. 29). Paul Davies also discusses the profound impact that the observer has on the system being observed, as a consequence of quantum effects (1984, p. 49). Being part of the system, we have no hope of characterizing what we observe to its most fundamental level and, as Solomon relates to us, **that is a direct consequence of God's design.**

So as we discuss the limitations of Science illustrated by scientific laws like the Uncertainty Principle and

the Incompleteness Theorem, we see that we are merely discovering manifestations of design constraints that God Himself placed on the Universe when He created it. These principles were put in place by God's design as sure as Newton's Laws, Kepler's Laws of Planetary Motion, or Einstein's Relativity Theories were, providing further evidence for the existence of design in the Universe and the God Who developed that design. Furthermore, we see this all the more clearly through a realization of our own inherent limitations to understand His work "from beginning to end."

[NOTE: Although neither God nor His creative activity can be **directly** observed, **indirect** evidence for His existence can be gathered through scientific observation (e.g., evidence of **design** that leads to the conclusion that He exists).]

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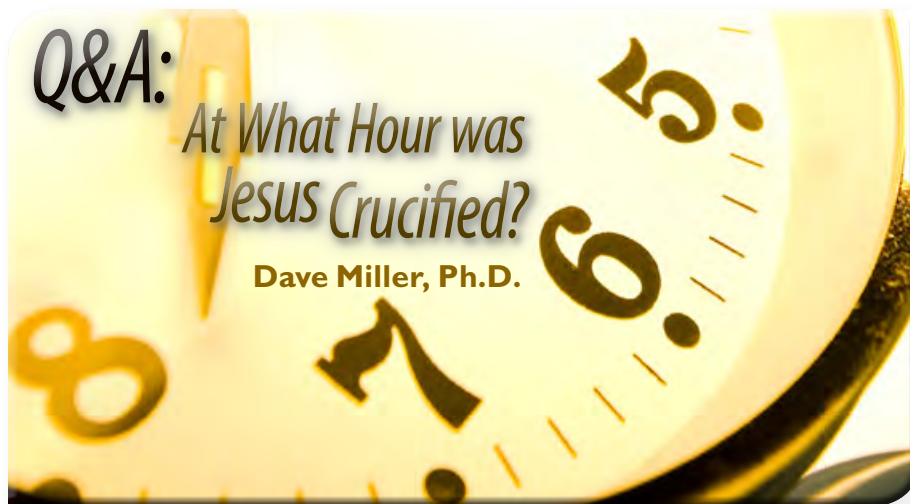
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Jeff Miller

December 5,12	Montgomery, AL	(334) 272-8558
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Then they compelled a certain man, Simon a Cyrenian, the father of Alexander and Rufus, as he was coming out of the country and passing by, to bear His cross. And they brought Him to the place Golgotha, which is translated, Place of a Skull. Then they gave Him wine mingled with myrrh to drink, but He did not take it. And when they crucified Him, they divided His garments, casting lots for them to determine what every man should take. Now it was **the third hour**, and they crucified Him (Mark 15:21-25, emp. added).

Using Jewish reckoning, Mark's "third hour" is 9:00 a.m.—three hours **after** John's "sixth hour." Ample time is provided for the events leading up to the actual crucifixion, the proper sequence is preserved, and the Bible's pristine historicity is vindicated.

It is truly tragic that skeptics are so bent on discovering discrepancies in inspired writ that they manifest such extreme prejudice. An honest, unbiased individual will take the time to examine the details of Scripture and extend a fair hearing to its record—the same fairness that the skeptic desires for himself. Despite the ongoing assault of those who view the Bible with disdain—an assault that has spanned two millennia—the Bible remains unscathed in its claim to be of divine origin.

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ONE allegation leveled by Bible critics is the difference that exists between Mark and John in their reporting of the hour of the crucifixion (McKinsey, 2000, pp. 295-296; Wells, 2013). Mark records that the Lord was crucified at the third hour (15:25), while John records that Jesus was tried before Pilate at the sixth hour (19:14)—which would seem to be after the time Mark says Jesus was crucified. The harmonization of this surface difference is quite simple and further underscores the sophistication of Bible inspiration.

Living as we do in the 21st century, we fail to remember or recognize that time has not always been reckoned the way it is today worldwide. We are able to calculate quickly the time anywhere in the world. For example, if it is 9:00 a.m. in Montgomery, Alabama (which is on Central time), it is 10:00 a.m. in New York City (which is on Eastern time), 3:00 p.m. in London, and 12:00 midnight in Sydney, Australia. Not so in antiquity. The ancients used a variety of systems by which they reckoned time.

A careful study of the biblical text reveals the fact that John (who wrote near the end of the first century, several years after the writings of the synoptic writers, away from Palestine, and addressing an eclectic, Hellenistic audience) based his calculations on **Roman civil time**. Mat-

thew, Mark, and Luke, on the other hand, computed their allusions to days and hours according to **Jewish time** (cf. Smith, 1869, 2:1102; Robertson, 1922, p. 285; Lockhart, 1901, p. 28; Geisler and Howe, 1992, p. 376; Brewer, 1941, pp. 330-331; McGarvey, 1892, 2:181-182).

In light of these facts, read the context of John's allusion to the "sixth hour":

When Pilate therefore heard that saying, he brought Jesus out and sat down in the judgment seat in a place that is called The Pavement, but in Hebrew, Gabbatha. Now it was the Preparation Day of the Passover, and **about the sixth hour**. And he said to the Jews, "Behold your King!" But they cried out, "Away with Him, away with Him! Crucify Him!" Pilate said to them, "Shall I crucify your King?" The chief priests answered, "We have no king but Caesar!" Then he delivered Him to them to be crucified. So they took Jesus and led Him away (John 19:13-16, emp. added).

John does not actually refer to the hour of the crucifixion, but only to the proceedings leading up to the crucifixion, specifically, the general timeframe when Pilate handed Jesus over to the Roman guards to commence the execution procedures. At this point, there yet remained the torturous, time-consuming journey to the place of execution. These events began to occur "about" 6:00 a.m.

Mark's account reads as follows:



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